

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled).
2. (Currently Amended) A ~~system~~ method according to claim [[1]]46, wherein [[the]] a set of rules develops relationships between the compared data components.
3. (Currently Amended) A ~~system~~ method according to claim [[1]]2, wherein the set of rules comprises a set of user-defined rules.
4. (Currently Amended) A ~~system~~ method according to claim [[1]]2, wherein the set of rules comprises a set of rules based on at least one pre-generation function executed on the ~~source records~~ plurality of medical records.
5. (Currently Amended) A ~~system~~ method according to claim [[1]]46, wherein ~~the data enhancement layer comprises a server is~~ configured to generate and store the ~~dimensional~~ dimensionally enhanced data grouping.
6. (Canceled).
7. (Currently Amended) A ~~system~~ method according to claim [[1]]46, wherein the ~~source records~~ plurality of medical records comprise data specific to at least one of a patient, a provider, a test result, and an order.
- 8-45. (Canceled).

46. (New) A method of generating a dimensionally enhanced data grouping, comprising:

a) identifying a plurality of medical records as a first dimension of data, wherein each medical record comprises a plurality of data fields;

b) storing the first dimension of data in a computer;

c) entering into the computer a plurality of matching criteria, wherein each criterion is user-generated or machine-generated;

d) the computer analyzing the first dimension of data based on the matching criteria to determine a target number of dimensions of data;

e) for each medical record in the first dimension of data, using a computer to:

i) identify data in each data field of the medical record being analyzed;

ii) compare the data in each data field of the medical record being analyzed with data in each field of the other medical records of the first dimension of data;

iii) determine if the comparison of step (ii) above meets at least one of the matching criteria;

iv) linking the two medical records together based on the result of step (iii) above;

v) storing the linked medical records as a single medical record in a second dimension of data;

f) repeating step (d) above on the second dimension of data to create a third dimension of data, and repeating step (d) on subsequently generated dimensions of data until the target number of dimensions of data has been created;

g) storing the generated target number of dimensions of data in the computer;

h) automatically, with the computer, identifying medical records in the stored dimensions of data as of potential interest;

i) automatically, with the computer, generating inferred statements and providing the inferred statements to the user along with the medical records of potential interest as supporting evidence of the inferred statements;

j) presenting the stored dimensions of data to the user and allowing the user to perform queries on the stored dimensions of data;

k) entering new medical records into the computer;

l) identifying the newly entered medical records and the previously generated stored dimensions of data as a newly identified first dimension of data;

m) adjusting the machine-generated target number of dimensions based on the newly identified first dimension of data; and

n) performing steps (d-j) on the newly identified first dimension of data to generate a dimensionally enhanced data grouping.